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3400 Forest Pest Management

Plantation Survey for Root Disease
White River Ranger District

Forest Supervisor, Mt. Baker-Snoqualmie NF

In response to a request from the District to obtain information for immediate planning purposes, the following information concerning four plantations on the White River Ranger District is presented.

Thirteen Douglas-fir plantations (10-15 years old) were surveyed by a Forest Pest Management pathology crew primarily for disease-caused mortality. A more detailed report concerning all 13 plantations will be issued later. In the interim, the following information is reported for four plantations that are to be treated this summer:

Midnight Creek, Unit #2

About 30 acres of this plantation were surveyed above the main road that bisects the unit. Most of the mortality is caused by *Armillaria mellea* in Douglas-fir. Infection centers are scattered throughout the plantation and range in size from one tree to about 3 acres. Some mortality caused by *Phellinus weirii* was found at the extreme east end of the plantation.

Control of *Armillaria mellea* in established stands is done by promoting stand vigor and thus increasing resistance to the disease. On the West Side it is believed that Douglas-fir becomes increasingly resistant to Armillaria root rot starting around age 15 to 20 and tree killing is rare after age 30. Where *Armillaria* is present and stocking is light we recommend that these areas not be thinned since it is nearly impossible to determine which trees will survive in infected areas. Moderately to heavily-stocked areas should be thinned to a closer than normal spacing (say 10 X 10 rather than 12 X 12) to anticipate future mortality. Thinning should increase tree vigor and reduce mortality caused by *Armillaria*.

Areas with *Phellinus*-caused mortality at the east end of the plantation should be marked with a 50-foot buffer zone, and all Douglas-fir within this area should be destroyed. Retain *Phellinus*-resistant species such as hemlock, cedar, or rust-free white pine if present. Infected areas can be replanted with the species or with hardwoods such as willow as suggested by the District.

Dalles Ridge Fire Salvage, M-3 Unit

About 40 acres of this unit were surveyed. All of the mortality is caused by *Armillaria mellea* and occurs as very small and widely scattered centers over the surveyed area. We recommend that the plantation be thinned to a closer than normal spacing to anticipate future mortality and increase tree vigor.

Palisades Salvage, Unit #2

Nearly 25 acres of this unit were examined. As in the Dalles Ridge Unit, all of the mortality is caused by *Armillaria mellea*. However, damage is more extensive especially on the north half of the unit. We recommend that the unit not be thinned or thinned very lightly where excessive tree competition exits because of the widespread infection and the difficulty of selecting uninfected trees.

Midnight Blowdown, Unit #5

About 19 acres of this unit were surveyed. This unit has several one-acre dead and dying tree patches caused by *Phellinus weirii* scattered throughout the plantation and a few very small areas of *Armillaria*-caused mortality in the upper west-end of the unit. As in Midnight Creek Unit, we recommend that all *Phellinus*-centers be marked with a 50-foot buffer zone. All Douglas-fir within this area should be destroyed. Most of the plantation is so heavily infected that some zones may actually overlap, and therefore it may be more practical to treat the entire area. Within these areas retain or plant any other species besides Douglas-fir. If left untreated, this plantation will have severely reduced yields at rotation age.

As mentioned previously, a more detailed report including maps should appear later in the year. If FPM can be of further assistance, please contact us.

PAUL E. BUFFAM

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